

REMARKS

In the present Amendment, claim 1 has been amended to incorporate the subject matter of claim 5 and to replace “comprising” with “consisting essentially of.” Claim 5 has been canceled, accordingly.

Claims 8 and 9 have been added. Claims 8 and 9 are supported by the specification, for example, original claims 1 and 4-7 and Examples.

Claims 2-4 and 7 were previously canceled.

No new matter has been added and entry of the Amendment is respectfully requested. Upon entry of the Amendment, claims 1, 6, 8 and 9 will be all the claims pending in the application.

I. Response to Rejection Under 35 U.S.C. § 103

Claims 1, 5 and 6 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over JP 4-130324 (“JP ‘324”) in view of Lin et al (U.S. Pat. No. 6,340,734).

Applicants respectfully submit that the present claims are patentable over the cited references for at least the following reasons.

Initially, Applicants note that present claims 1 and 6 recite a polysiloxane resin *consisting essentially of* (a1) a siloxane unit containing a hydroxybenzylsilsesquioxane unit as an alkali-soluble group, and (a2) a phenylsilsesquioxane unit containing an alkali-insoluble group, said alkali-insoluble group having no acid-decomposable group. A component like tert-butoxycarbonyloxybenzylsilsequioxane used in the Comparative Example on page 33 in the application has a material effect, as can be seen from the Examples and Comparative Example

contained in the present specification, and thus an embodiment containing such a component is not included within the scope of the present claims.

Specifically, the resin in Examples 1-5 has a p-hydroxybenzylsilsesquioxane unit and a phenylsilsesquioxane unit as its components, while the resin in the Comparative Example comprises a p-hydroxybenzylsilsesquioxane unit, a phenylsilsesquioxane unit and a tert-butoxycarbonyloxybenzylsilsesquioxane unit. Examples 1-5 provide high definition and form resist patterns with good sectional shapes, compared to the Comparative Example (page 34 of the specification).

Moreover, JP '324 describes a resin of formula $(p\text{-OH-Ph-CH}_2\text{-SiO}_{3/2})_n(\text{Ph-CH}_2\text{-SiO}_{3/2})_m$ (page 1). Although the 2nd unit in this resin contains a phenyl moiety, it is a benzylsilsesquioxane unit, which is different from an arylsilsesquioxane unit (rather, it would be an aralkylsilsesquioxane unit). For this reason, JP '324 does not disclose a resin containing an arylsilsesquioxane unit, let alone a phenylsilsesquioxane unit containing an alkali-insoluble group, said alkali-insoluble group having no acid-decomposable group.

Further, Lin et al describes silsesquioxane polymers of formula $[\text{Si}(\text{R}_1)\text{O}_{1.5}]_n[\text{Si}(\text{R}_2)\text{O}_{1.5}]_m$ wherein R_1 is preferably $\text{HO-Ph-C}_a\text{H}_{2a-}$, and a is at least 2 (col. 4, line 52-col. 5, line 13). A hydroxybenzyl group has the formula of HO-Ph-CH_2- . Thus, Lin et al excludes a resin containing a hydroxybenzylsilsesquioxane unit.

Therefore, even if there might be motivation to combine the cited references in the manner as suggest by the Examiner, the combination still would not be the presently claimed invention.

Also, the Examiner's position appears to be that it would have been obvious to determine a suitable molecular weight range for the organic silicon polymer material.

The presently claimed invention provides unexpectedly superior results in terms of membrane formation characteristics and dry etching resistance, by using the specific range of the molecular weight of the organic silicon polymer material. Specifically, as described on page 10, lines 11-18 of the present specification, "If the weight average molecular weight is less than 1000, the resulting resist composition is poor in film-forming property and has decreased dry etching resistance. In contrast, if it exceeds 100000, the resulting resist composition has decreased dissolution rate in alkali to thereby deteriorate definition."

None of the cited references disclose or suggest the above advantages of the present invention.

In view of the foregoing, Applicants respectfully submit that the present invention is not obvious over the cited references and thus the rejection should be withdrawn.

II. Conclusion

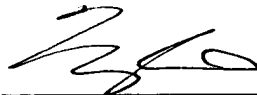
In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No.: 10/748,190

Attorney Docket Q77760

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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